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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-------------------------|---------------------|------------------|
| 10/684,137 | 10/10/2003 | Krzysztof Matyjaszewski | 00798DIVCIP | 1296 |

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EXAMINER

RABAGO, ROBERTO

ART UNIT PAPER NUMBER

1713

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|----------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/684,137 | MATYJASZEWSKI ET AL. | |
| | Examiner | Art Unit | |
| | Roberto Rábago | 1713 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 46 and 47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-45, and an election of species, in the reply filed on 10/20/2005 is acknowledged.

Following a search of the elected species, the remaining species within the scope of claims 1-45 are joined for examination

Specification

2. The specification is objected to because the Brief Description of the Figures includes a description of non-existent Figure 12(a), yet contain no description of Figure 12.

Claim Objections

3. Claim 5 is objected to because it concludes with two periods.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-12, 16-26, 30-42, 44 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite because it cannot be determined whether a process of polymerization is being claimed, or whether the scope includes any catalytic process. Specifically, the claims require that the monomers be radically polymerizable, and furthermore specifies a catalyst. Although the claims appear to intend that the catalyst is one which is catalytic for polymerization of the polymerizable monomers (necessarily resulting in a process of polymerization), the claim language is not clear on this point. The claims should be amended to clarify whether the process is intended as a process of polymerization, or whether the process may be any catalytic process (wherein the monomers are polymerizable, but do not necessarily polymerize by the claimed catalyst or process). Should the claims be amended to specify the latter scope, applicants should identify the location(s) in the specification where support exists for such breadth. The claims will be examined assuming the claim language intends the process to be a polymerization of the recited monomers using the recited catalyst.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 1, 2, 10, 11, 16, 18, 24, 25, 30, 32, 33, 41 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Simone et al. (US 3,037,004).

The reference discloses in Example VII polymerization of methacrylic acid by contact with a titanium complex in a method further comprising water and formaldehyde, including all claimed limitations.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matyjaszewski et al. (US 5,807,937).

The reference discloses ATRP of free-radically polymerizable monomers in the presence of a transition metal catalyst comprising heteroatom ligands (paragraph bridging col. 6-7). The use of methacrylic acid as a monomer is disclosed at col. 16, lines 46-47; water and other alcohols as polymerization medium are disclosed at col. 22, lines 31-35; transition metals comprising multidentate heteroatom ligands and charged species are disclosed at col. 18, line 33 through col. 20, line 54. One of ordinary skill in the art would be motivated to use the claimed method because patentee

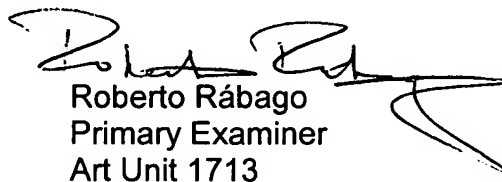
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has disclosed these method components as useful embodiments within the scope of the disclosure. The reference has not measured 90% protonation, redox potential, acidity constants, conditional disproportionation constants or conditional phylicity; however, these properties would appear to be inherent in view of the metal-ligand structures disclosed. The burden of proof is shifted to applicants to show that the suggested reference complexes and method would not have the claimed unreported properties.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roberto Rábago
Primary Examiner
Art Unit 1713

RR
January 9, 2006